IN THE CLAIMS

We Claim:

CLAIMS

1. (Currently Amended) A method, ~~for~~ comprising:

receiving a data frame at a first communications protocol software module;

allocating a memory buffer in which to store at least some portion of the data frame,

the memory buffer is pointed to by a non-unique pointer associated with a first communication protocol software module (CPSM),

wherein the memory buffer is not unique to any protocol software module in any network layer but is commonly shared and accessible to multiple different protocol software modules in different network layers, each of the multiple different protocol software modules may include at least one of being developed by a different vendor, having different buffer format or having different buffer lengths;

storing the at least some portion of the data frame in the memory buffer;

accessing the at least some portion of the data frame in the memory buffer pointed to by the non-unique pointer associated with the first CPSM to process the data frame by the first CPSM;

under control of a buffer manager software module, transferring the non-unique pointer associated with the first CPSM from the first CPSM to associate with a second CPSM and thus transferring control of processing the data frame in the memory buffer from the first CPSM to the second CPSM; and

accessing the at least some portion of data frame in the memory buffer pointed to by the non-unique pointer associated with the second CPSM to process the data frame by the second CPSM.

2. (Original) The method of claim 1, wherein allocating a memory buffer in which to store the at least some portion of the data frame comprises allocating a memory buffer from a pool of available memory buffers in which to store the at least some portion of the data frame.

3. (Previously Presented) The method of claim 1, wherein accessing the data frame in the memory buffer pointed to by the pointer associated with the first CPSM to process the data frame, comprises providing a first pointer to a beginning of the memory buffer and a second pointer to an ending of the memory buffer.

4. (Original) The method of claim 3, further providing a length of the memory buffer to the first communications protocol module.

5. (Original) The method of claim 1, further comprising returning the memory buffer to the pool of available memory buffers when processing of the data frame is completed.

6. (Original) The method of claim 5, wherein returning the memory buffer to the pool of available memory buffers when processing of the data frame is completed, comprises inserting the pointer to the memory buffer in to a linked list of available memory buffers.

7. (Cancelled)

8. (Currently Amended) [[A]] An apparatus comprising:

means for receiving a data frame at a first communications protocol software module;

means for allocating a memory buffer in which to store at least some portion of the data frame, the memory buffer is pointed to by a non-unique pointer associated with a first communication protocol software module (CPSM), wherein the memory buffer is not unique to any protocol software module in any network layer but is commonly shared and accessible to multiple different protocol software modules in different network layers, each of the multiple different protocol software modules may include at least one of being developed by a different vendor, having different buffer format or having different buffer lengths;

means for storing the at least some portion of the data frame in the memory buffer;

means for accessing the at least some portion of the data frame in the memory buffer pointed to by the non-unique pointer associated with the first CPSM to process the data frame by the first CPSM;

means for transferring the non-unique pointer associated with the first CPSM, under control of a buffer manager software module, from the first CPSM to associate with a second CPSM and thus transferring control of processing the data frame in the memory buffer from the first CPSM to the second CPSM; and

means for accessing the at least some portion of data frame in the memory buffer pointed to by the non-unique pointer associated with the second CPSM to process the data frame by the second CPSM.

9. (Original) The apparatus of claim 8, wherein the means for allocating a memory buffer in which to store the at least some portion of the data frame comprises means for allocating a memory buffer from a pool of available memory buffers in which to store the at least some portion of the data frame.

10. (Previously presented) The apparatus of claim 8, wherein the means for accessing the data frame in the memory buffer pointed to by the pointer associated with the first CPSM to process the data frame, comprises means for providing a first pointer to a beginning of the memory buffer and a second pointer to an ending of the memory buffer.

11. (Original) The apparatus of claim 10, further providing a length of the memory buffer to the first communications protocol module.

12. (Original) The apparatus of claim 8, further comprising means for returning the memory buffer to the pool of available memory buffers when processing of the data frame is completed.

13. (Original) The apparatus of claim 12, wherein the means for returning the memory buffer to the pool of available memory buffers when processing of the data frame is completed, comprises means for inserting the pointer to the memory buffer in to a linked list of available memory buffers.

14. (Cancelled)

15. (Currently Amended) An article of manufacture, comprising:

a machine accessible medium, the machine accessible medium providing instructions, that when executed by a machine, cause the machine to:

receive a data frame at a first communications protocol software module;

allocate a memory buffer in which to store at least some portion of the data frame, the memory buffer is pointed to by a non-unique pointer associated with a first communication protocol software module (CPSM)[[;;]],

wherein the memory buffer is not unique to any protocol software module in any network layer but is commonly shared and accessible to multiple different protocol software modules in different network layers, each of the multiple different protocol software modules may include at least one of being developed by a different vendor, having different buffer format or having different buffer lengths;

store the at least some portion of the data frame in the memory buffer;

access the at least some portion of the data frame in the memory buffer pointed to by the non-unique pointer associated with the first CPSM to process the data frame by the first CPSM;

transfer the non-unique pointer associated with the first CPSM, under control of a buffer manager software module, from the first CPSM to associate with a second CPSM and thus transfer control of processing the data

frame in the memory buffer from the first CPSM to the second CPSM; and

access the at least some portion of data frame in the memory buffer pointed to by the non-unique pointer associated with the second CPSM to process the data frame by the second CPSM.

16. (Original) The article of manufacture of claim 15, wherein the machine readable instructions, that when executed by a machine, cause the machine to allocate a memory buffer in which to store the at least some portion of the data frame, cause the machine to allocate a memory buffer from a pool of available memory buffers in which to store the at least some portion of the data frame.

17. (Previously Presented) The article of manufacture of claim 15, wherein the machine readable instructions, that when executed by a machine, cause the machine to access the data frame in the memory buffer pointed to by the pointer associated with the first CPSM to process the data frame, cause the machine to provide a first pointer to a beginning of the memory buffer and a second pointer to an ending of the memory buffer.

18. (Original) The article of manufacture of claim 17, further comprising machine readable instructions, that when executed by a machine, cause the machine to provide a length of the memory buffer to the first communications protocol module.

19. (Original) The article of manufacture of claim 15, further comprising machine readable instructions, that when executed by a machine, cause the machine to return the memory

buffer to the pool of available memory buffers when processing of the data frame is completed.

20. (Original) The article of manufacture of claim 19, wherein the machine readable instructions, that when executed by a machine, cause the machine to return the memory buffer to the pool of available memory buffers when processing of the data frame is completed, cause the machine to insert the pointer to the memory buffer in to a linked list of available memory buffers.

21. (Cancelled)